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Survey an interesting sketch of the mode of carrying on the geographical work of the Survey, showing the evidence on which the final maps prepared by the Survey rest. The primary triangulation was in charge of Mr. James T. Gardner until the autumn of 1875, when, on his resignation, the work was continued by Mr. Wilson. To give some idea of the amount of work that has been done by the topographical corps in the Survey of Colorado, it may be stated that it has established 1280 topographical stations within an area of about seventy thousand square miles, and from each station all the surrounding country was sketched. Mr. Wilson's assistant made over one thousand pages of profile sketches during the field season of 1875, each page being six by ten inches, while he himself made some five hundred pages of drainage sketches, and took the thousands of angles that were necessary to locate all the points. The high order of the work done, added to the difficulties and dangers under which geographical labor is performed in the most mountainous and wild section of our country, reflects credit upon our government in authorizing and sustaining such undertakings.

GEOGRAPHICAL NEWS. — *The Geographical Magazine* is publishing an account of the Official European Cartography in 1875-76, which possesses a good deal of interest. Among recent books of travel are Cameron's Journey across Africa; Canoe and Camp life in British Guiana, by C. Barrington Brown; The Cradle of the Blue Nile, by E. A. De Cosson; Peru in the Guano Age, by A. J. Duffield. Baron von Richthofen's new work on China is ready for publication. An eruption of Mauna Loa, the great volcano of Hawaii, took place on February 14th, in a new district. The lava probably came from the summit-vent, and traveled to the coast by subterranean passages.

MICROSCOPY.¹

ZENTMAYER'S TURN-TABLE. — Mr. Zentmayer has recently contrived a turn-table on which the slide is self-centred for width, by the absurdly simple device of bringing its two sides up to the opposite sides of a couple of brass pins equally distant from the centre of rotation. The adjustment for length is made by hand, guided by circles on the brass plate, or for slides of standard size by a pin at one end. The slide may be of any reasonable width, and can be easily and instantly decentred for refinishing old slides. The table is mounted with a clamp for attaching it to a table, though it can be furnished on a heavy block in the usual manner, if desired.

MICROSCOPY AT NASHVILLE. — At the Nashville meeting of the American Association for the Advancement of Science, commencing August 29th, and continuing about one week, special arrangements will be made for the care of instruments and for the convenience of those who wish to use them. The local sub-committee having charge of these arrangements consists of Dr. T. O. Summers, Jr., and Profs. G. S. Blackie

¹ Conducted by DR. R. H. WARD, Troy, N. Y.

and Alex. Winchell, who will leave nothing undone that is believed to be for the advantage of this department. As microscopy has been made a permanent sub-section, it is now, in reality, a national society of microscopists, with power to elect officers and continue its organization from year to year, and to avail itself of the great facilities and advantages of meeting with, and as members of the American Association. It was the unanimous and earnest desire of the members present at the last meeting, at Buffalo, that all the microscopists of the country, and especially the officers and members of microscopical societies, should take a hearty interest in the enterprise, and contribute to its usefulness by attending the meetings when possible, and sending contributions to be read if unable to attend personally. Circulars giving particulars of the arrangements for this meeting can be obtained from Dr. T. O. Summers, Jr., of Nashville, chairman of the local sub-committee, or from the editor of the microscopical department of the *NATURALIST*.

SHELL-SAND FROM THE BERMUDAS. — C. C. Merriman, of Rochester, N. Y., whose name we have had occasion to mention before in these pages, has just returned from a few months' visit at the Bermuda Islands, where he has gathered some quite remarkable specimens of shell-sand, composed almost entirely of foraminifera. It is interesting not only as a beautiful object under the microscope, but as being the material of which the islands are formed. In favorable conditions of winds and tides it may be gathered on the sand beaches quite fresh from the ocean, in which case the shells and corallines and sponge spicules are in great part unbroken, and many of them beautifully colored. Such conditions, however, occur quite rarely, as Mr. Merriman was able on two days, only, of his visit to make perfectly satisfactory collections. He has contributed a set of six exceedingly interesting and beautiful slides to the "Postal Club." Slides or material for the same can be obtained from him in exchange for any really interesting or valuable slides or material.

DETECTION OF CRIMINALS BY HAND MARKS. — In a very instructive lecture on the uses of the microscope, delivered at Washington, on April 30th, by Mr. Thomas Taylor, Microscopist of the Department of Agriculture, a view was presented on the screen showing the markings on the palms of the hands and tips of the fingers, and the important suggestion was made that the microscope might be used to effect in the detection of criminals by comparing the marks of a murderer's hands or fingers, which are often impressed in blood stains on the weapons used, with impressions in wax taken from the hands of accused or suspected persons.

ORGANISMS IN ROCHESTER HYDRANT WATER. — The Hemlock Lake water supply of the city of Rochester must be of extraordinary purity, if its ordinary condition is represented by the observations of Prof. S. A. Lattimore of that city, who examined it for the sake of detecting the

cause of the fish-like odor which it possessed last fall. In filtering large quantities of the water he scarcely obtained more than one or two grains of residue from a thousand gallons of water. Of this a large proportion consisted of small particles of clay and sand, and the balance was mainly composed of Diatomaceæ (*Cyclotella operculata*, *Melosira varians*, *Asterionella formosa*, *Fragilaria capucina*, *Navicula cuspidata*, and *Amphora ovalis*), Desmidiaceæ (*Closterium lunula*, and *Staurastrum gracile*), Oscillatoriaceæ (*Oscillatoria autumnalis*), Palmellaceæ (*Botryococcus braunii*), and Entomostraca (*Anurea heptodon*, *Cyclops quadricornis*, *Cypris tristriata*, and *Cetochilus septentrionalis*). Chemical analysis equally indicated the unusual purity of the water, and gave no clew to the cause of its obnoxious odor. The experiment of placing a small quantity of the microscopic algæ from the filter in distilled water resulted in the production of the well-known odor, after covering the mixture from the air for a few hours, just as it had done in a precisely similar experiment by Prof. N. T. Lupton, of Nashville, Tenn., on the water supply of that city. This would strongly confirm the partially accepted belief that this odor, which so often annoys the residents of our cities, is due to some condition, probably the decay and decomposition of the algæ in the water. No remedy is known except exposure to the air, which soon removes the odor.

POWDERED SULPHUR. — Mr. H. G. Hanks presented at a recent meeting of the San Francisco Microscopical Society three slides illustrating the substitution of powdered sulphur for the more costly and pure sublimed sulphur. Sublimed sulphur presents under the microscope a well-marked appearance of globular particles and botryoidal and stalactitic masses, while the powdered sulphur, which appears the same to the naked eye, is shown as angular fragments of irregular size. The powdered article when sold for the sublimed, should be regarded as adulterated, since it contains foreign matter.

EXCHANGES. — Diatoms from Coorongite, from South Australia, for good mounted objects. Address GALLOWAY C. MORRIS, East Tulpehocken Street, Germantown, Phil.

SCIENTIFIC NEWS.

— Every one who has occasion to use collections of small animals in alcohol knows the inconvenience of handling a large number of little bottles that will neither stand upright nor be still on their sides. If they are kept in boxes a large number have to be taken out one by one to find any particular bottle, and if they are set upon shelves the front ones are sure to be upset while searching among those in the rear. In taking care of a collection contained in several thousand bottles of this kind, the writer has been forced to contrive some method of arranging